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ABSTRACT

Because training teachers to collect observational data and to use operant techniques has frequently been found to be prohibitively time-consuming, the author attempted to develop simpler, more efficient training procedures. This report presents the results of a study in which these procedures were implemented. Teachers followed a three step training process to learn to observe a disruptive child's behavior, to observe their own interactions with a child, and to initiate more frequent contact with a child when he is On Task in order to increase his On Task behavior. Observers recorded children's behavior as well. Reliability of observations by both teachers and observers was found to be adequate. Two teachers successfully used the procedures to change the behavior of disruptive children. Two were not successful because they failed to change their own behavior. (Author/TL)

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Toward an Efficient Technique for Teacher Conducted Behavior Modification Programs for Disruptive Classroom Behavior[1]

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Introduction

Psychologists working in schools are faced with frequent occasions on which they would like to use teacher conducted behavior modification programs to help classroom teachers work with difficult children. It has been well demonstrated that such programs can be very effective in helping teachers work with a variety of problem behaviors (e.g. Becker, Madsen, Arnold and Thomas, 1967; Hall and Broden, 1967; Patterson, Shaw, Ebner, Walker, Mattson, and Buckley, 1969); but psychologists working in an applied setting serving large numbers of children and teachers frequently find that the time required to observe children's behavior and train teachers to use operant techniques

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prohibit them from using such procedures. What is needed is a simplified program which will enable the psychologist to train teachers to observe and modify problem classroom behavior with a minimal investment of time by the psychologist.

The school psychologist considering using an operant shaping program is also faced with a second problem: While there are now many reports of successful use of operant programs in classrooms, there is little evidence to indicate how frequently such programs can be expected to succeed, and whether the probability of success is high enough to justify the use of classroom behavior modification programs in preference to other techniques for working with difficult children. Data about the probability of success of such programs can only be accumulated through research studies using large groups of classrooms. But, like the applied psychologist, the researcher interested in such large group studies is severely handicapped by the time investment required to train each teacher and to adequately assess the teacher's and children's behavior in each classroom.

The present study had three primary goals:

1. To develop simple procedures with which nonparticipant classroom observers could reliably record classroom behavior data after very little training.

2. To develop and test simple and inexpensive procedures with which classroom teachers could collect behavioral data without interrupting other teaching duties.

3. To develop easily communicated techniques with which teachers could increase On Task behavior in disruptive children by using simple operant principles.

Method

Subjects

First, second, and third grade teachers in a number of Madison, Wisconsin, public schools were told that a research project was being undertaken to study management techniques teachers could employ with disruptive children. Teachers were invited to participate if in their classroom they had at least one disruptive boy they had difficulty handling. A "disruptive child" was broadly defined as a child whose classroom behavior interfered with his learning, bothered other children, and disturbed the teacher. Teachers were not told specifics about the project except that it would involve occasional visits by observers, that some teachers would serve as control subjects, and that all teachers could procede with any other programs they were using for disruptive children (e.g. tutoring, family counseling, etc.)

Each volunteer teacher selected four boys. The first was her "target" boy, the disruptive boy with whom she wished to work during the program. The second was another disruptive boy. The third and fourth were "well behaved" boys. The three extra boys served as intra-class controls and also as blinds for the observers.

After a teacher had selected four boys and a daily experimental period for the project, she was randomly assigned to the experimental group or the no-treatment control group.

While approximately 20 teachers originally volunteered for the program, and most of these began participating as experimental or control subjects, unforeseen problems in scheduling observers resulted in dropping all but four experimental and five control teachers, whose classes were observed for at least two pre-intervention and two post-intervention sessions.

Observers

Four women (two undergraduate students and two college graduates) served as observers. None had previous experience with the recording techniques used, and only one had any previous classroom observation experience. Observers were blind as to the nature of the research project and the criteria by which teachers and children were chosen.

Observation Procedures for Nonparticipant Observers

In each classroom observers watched the four preselected children simultaneously and recorded two types of observations for each child. First, they recorded each child's behavior at one-minute intervals; second, they recorded each time a teacher "contacted" (spoke to or touched) one of the children. Behaviors recorded from both types of observations were classified according to the child's behavior. For the one-minute interval observations, the classification depended on the child's behavior at the moment he was observed. For the teacher-contact observations, the classification depended on the child's behavior immediately before the teacher initiated contact. Observers made two decisions when classifying behavior. First, they decided whether the behavior was On Task (studying) or Off Task (not studying); second, if Off Task, whether it was appropriate or inappropriate. All behaviors thus fell into one of three classes: On Task; Off Task but Appropriate; and Off Task and Inappropriate. While a short explanation and a few examples were given of behaviors which might be included in the three categories, observers largely followed their common sense definitions of "On Task" and "Appropriate."

Observers were given less than four hours of instruction and practice before checking reliability and beginning to collect actual

data. This short training period was consonant with the goal of developing simple, easy to teach observation procedures.

Observation Procedures for Teachers

Teachers observed one child only. The procedures they used were a simplified version of the procedures used by nonparticipant observers. Teachers recorded two sets of data: the child's behavior at regular intervals, and the child's behavior immediately before the teacher initiated contact.

During observation periods, each teacher carried a 5" x 7" index card on which were marked five-minute intervals: :00, :05, :10, etc, to correspond, for example, to 9:00, 9:05, 9:10, etc. Beside each time was a plus and a minus. The teacher glanced periodically at a clock, and when she first noticed a five minute interval had begun, she observed the target child for a few seconds. She then circled the plus for that interval if the child was On Task and the minus if he was Off Task. The definitions of On Task and Off Task were left largely to the teacher's discretion. No special timer was used to indicate five minute intervals, nor was the teacher required to observe at intervals of exactly five minutes. Obviously such informal timing could lead to intervals of somewhat varying lengths; but if a teacher remembered to make most of her observations, the procedures gave a series of observations spaced fairly regularly throughout a period. From these observations the percentage of On Task behavior during that period could be estimated for the child.

Teachers recorded each contact they initiated with the target child by placing a plus or minus on the face of a clock drawn on the lower half of their observation card. A plus indicated On Task behavior immediately before the teacher contacted (spoke to or

touched) the child, and a minus indicated Off Task behavior. The location of the mark on the clock face indicated the approximate time of the contact. At the end of a session, the teacher computed from this material the number of times she contacted the child, the number of times these contacts followed On Task behavior, and the number of times they followed Off Task behavior.

Teachers were trained to use these observation procedures in three steps. First, they recorded the child's behavior at five minute intervals. Second, they recorded their contacts with the child. Third, they recorded both types of observations simultaneously. Generally about three one-hour sessions were spent learning and practicing each step.

Simplified Operant Training for Teachers

A teacher who has mastered the observation procedures explained above has already learned several skills necessary for conducting her own operant shaping program with a target child. She has learned to observe the child regularly to determine if he is On Task; and she has learned to observe her own behavior to determine if she is interacting with the child when he is On- or Off-Task. Teaching her to use these skills to increase the child's On Task behavior simply requires explaining to her the importance of attending to On Task behavior (Becker, et al., 1967; Hall and Broden, 1967; Hall, Lund, and Jackson, 1968; Hall, Panyan, Rabon, and Broden, 1968; Madsen, Becker, Thomas, Koser and Plager, 1968; Thomas, Becker and Armstrong, 1968; Ward and Baker, 1968; McAllister, Stachowiak, Baer, and Conderman, 1969; Broden, Bruce, Mitchell, Carter and Hall, 1970; Packard, 1970) and encouraging her to increase the number of times she contacts the child while he is On Task.

Instructions given to teachers emphasized increasing contacts to On Task behavior. No attempt was made to have teachers reduce attention to Off Task or disruptive behavior.

Experimental Procedures

Teachers assigned to the experimental group were individually trained to use the observation and shaping procedures in three meetings with the experimenter. During the first meeting the teacher was taught to observe and record the target child's behavior every five minutes; during the second, to record her interactions with the child; during the third, to increase On Task behavior by attending to the child when he was On Task. Thereafter meetings were held approximately weekly to review procedures and discuss any problems which developed. Meetings lasted from about ten to thirty minutes.

Before beginning the observation and shaping program each teacher chose a 45 to 60 minute daily period to use as the experimental session. Class was conducted as usual during this period except that the teacher made her observations and worked to shape her target child's behavior, and occasionally observers visited the classroom.

At the end of each experimental class period the teacher added up her observations of each type and sent the observation card to the school secretary, who relayed the data to the experimenter by phone. If a teacher forgot to report her daily observations, the experimenter usually called to remind her.

Except for the short instruction and review meetings and the occasional telephoned reminders, there was no teacher-experimenter contact.

Each experimental class was observed two to four times while the teacher was learning the observation procedures and taking baseline

data, and two to four times starting about three weeks after the teacher had initiated the behavior shaping program. Each control class was observed six to eight times, timed to correspond as closely as possible to observations in experimental classes.

Teachers and observers were instructed that there should be no contact of any kind between them. Teachers were informed that the only information the experimenter received from the observers was their observational records.

Results

Interobserver Reliability

Per cent agreement scores were computed for fourteen sessions visited jointly by two observers. Six of these sessions were visited by the same pair of observers, and data from these sessions were used to compute interobserver correlations. The correlations are based on total session scores for each of 23 boys divided among six classes.

Table 1 presents the maximum, minimum, and mean per cent

Insert Table 1 about here

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agreement. Per cent agreement for the child behavior categories was determined by dividing the number of observations on which the observers agreed by the total number of observations. Per cent agreement for the occurrence of teacher contacts was computed by assuming that any contact recorded by either observer actually occurred, and by dividing the number of contacts recorded by both observers by the total number of different contacts scored by the two observers. The per cent agreement for the different classes of teacher contacts were

computed for those contacts recorded by both observers, by dividing the number of contacts on which both observers agreed as to classification by the number of contacts recorded by both observers.

The mean per cent agreement during sessions ranged from 74 per cent for the number of teacher contacts occurring, to 88 per cent for the discrimination between contacts following appropriate behavior and contacts following inappropriate behavior. Both when classifying child behavior and when classifying teacher contacts, the observers agreed somewhat better on the discrimination between Appropriate and Inappropriate than they did on the discrimination between On Task and Off Task. The wider range of percentages for teacher contact categories than for child behavior categories resulted from the small number of observations on which the contact percentages were based.

Table 2 presents the Pearson product-moment correlations for two observers. In contrast to the per cent agreement measures, the interobserver correlations suggest that the discrimination On Task-Off Task was generally easier than the discrimination Appropriate-Inappropriate. Except when reporting the number of contacts occurring during a session, the interobserver reliability for measures of teacher contacts was lower than the reliability for measures of child behavior. This is at least in part because of the very small number of contacts which usually occurred during a one hour session.

Insert Table 2 about here

Teacher-Observer Correlations

Table 3 presents correlations between teacher records and

Insert Table 3 about here

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observer records for four teachers, based on scores for the child on days when an observer was present.

Table 3 shows that teachers varied considerably in their ability to record classroom behavior, and that the same teacher might record one type of behavior well but another poorly.

On the whole, correlations for the child behavior scores tended to be lower than correlations for teacher contact scores. This is to be expected since both teachers and observers were to record all teacher contacts to the child, but teachers and observers were not recording the child's behavior at the same time: observers recorded the behavior every minute, and teachers recorded it approximately every five minutes.

Although teachers were asked to discriminate between On Task and Off Task behavior, some of the teacher measures correlated more highly with observer discriminations of Appropriate-Inappropriate, rather than On Task-Off Task. This suggests that some teachers were actually making the Appropriate-Inappropriate discrimination instead of the On Task-Off Task discrimination.

Teacher Conducted Operant Shaping Program

Of the four experimental teachers who conducted operant shaping programs, two were considered very successful in changing their children's behavior; and two, unsuccessful. Success was judged by the teacher's subjective report of changes, the teacher's daily observation record, and the nonparticipant observers' record.

Mrs. A's Class: A Successful Case

Mrs. A taught a class of about fifteen junior-primary children--children of first grade age not yet prepared behaviorally or scholastically for a regular first grade classroom. Mrs. A reported that

several of her children presented severe disruption problems. She selected the boy she considered most disruptive as her target, and a second boy as her disruptive control. Her "well behaved" controls were two boys she considered "somewhat better than most of the rest."

During baseline the mean percentage of time Mrs. A's child spent On Task was, according to teacher data, 35.8 per cent. The mean number of teacher contacts following On Task behavior was 4.9 per session. The mean number of teacher contacts following Off Task behavior was 8.9 per session.

During the first session of the operant shaping program Mrs. A increased the number of contacts following On Task behavior to eleven. During the first five days of the operant program she averaged 8.6 contacts per session following On Task behavior. She maintained the number of contacts following On Task behavior at approximately this level over the six weeks that the behavior shaping program was in effect.

The child's percentage of On Task behavior remained near the baseline level during the first eight sessions. The teacher reported at that time, however, that while the boy was not On Task any more than previously, his misbehavior was less severe.

Beginning the ninth day of the operant program, the frequency with which the child was On Task half the period or more began increasing. During the last twelve sessions (out of 29) the child was On Task an average of 48.5 per cent of each session. The mean number of teacher contacts following On Task behavior was 11.7 per session during the last twelve sessions according to the teacher's observations; and the mean number of interactions following Off Task behavior was 2.7 per session.

Observers visited Mrs. A's class twice during baseline and

three times during the operant program (once each during the third, fifth, and sixth weeks). Improvement in the child's behavior as recorded by observers was even greater than that recorded by the teacher. During baseline the child was On Task 25.5 per cent of the time and behaving appropriately 45.0 per cent of the time. Subsequent to the onset of the shaping program the child was On Task 65.0 per cent of the time and behaving appropriately 78.7 per cent of the time. This was an increase of 38.5 per cent in On Task behavior and 33.2 per cent in Appropriate behavior.

Mrs. B's Class: A Successful Case

Mrs. B's success came much more rapidly than Mrs. A's. Whereas Mrs. A attended to On Task behavior consistently for several days before getting significant changes in her target boy's behavior, Mrs. B's target boy changed almost immediately.

Mrs. B taught a third grade class of about twenty-five children. Her target child was considered to be above average in ability, well liked, and socially skilled; but he frequently interrupted the class by walking around, talking loudly, or getting other children involved in disruptive behavior.

On the first day of operant shaping Mrs. B attended to the target boy 14 times when he was On Task--in contrast to a baseline mean of 2.4. Mrs. B reported an immediate change in the boy's behavior, both on her observation card and from her subjective impressions. She continued to attend to On Task behavior about six to ten times per session throughout the next several weeks, and the boy's behavior continued improving and remained at a high level.

According to observer records, the target boy's On Task behavior increased from a baseline level of 70.3 per cent to 83.0 per cent, and his Appropriate behavior increased from 81.7 per cent to 92.0

per cent. There were three baseline and four post-intervention observations.

One interesting aspect of this boy's behavior is that while his behavior and school work improved considerably in Mrs. B's room, he remained a major problem on the playground, in the halls, and in other classrooms.

Mrs. C's Class: An Unsuccessful Case

Mrs. C's target boy failed to improve his behavior. According to observers' records his On Task behavior decreased from a baseline level of 56.8 per cent to a post intervention level of 48.0 per cent, and his Appropriate behavior decreased from 83.0 per cent to 70.3 per cent (four baseline observations and three post intervention observations). Teacher collected data did not show any clear improvement and the teacher did not feel subjectively that the boy improved.

It appears, however, that the child's failure to change can be attributed to a lack of consistent change on the part of the teacher. The teacher was frequently absent (she missed three days of school during the first week of the shaping program, for instance), and when in school she failed to attend repeatedly to the child's On Task behavior. While she did increase attention to On Task behavior somewhat over her self-reported baseline mean of 3.4 per session, only once during the first three weeks of the program did she report attending to On Task behavior as many as ten times during a session.

Mrs. D's Class: An Unsuccessful Case

Mrs. D was the most inconsistent of the teachers in collecting data. She was frequently absent, frequently forgot to collect data, and was occasionally "too busy." Her self-reported baseline rate for attending to On Task behavior was 2.2 per session, and during six

weeks of the operant program she only reported exceeding this number seven times.

Mrs. D's class was observed four times during baseline and four times during the operant shaping program. The observer records showed an increase in On Task behavior from 33.8 per cent to 46.0 per cent, and an increase in Appropriate behavior from 45.5 per cent to 71.5 per cent. While these are important improvements, they cannot be attributed to the intervention program because of the teacher's failure to carry out the program satisfactorily. They are more likely the result of other programs which were going on at the same time: counseling for the boy and his family, and medication for the boy.

The boy's being placed on medication proved to be a very interesting unplanned manipulation in this study, for when medication began the boy's behavior improved tremendously. The teacher's behavior, however, did not change. During five post-medication sessions for which the teacher reported 100 per cent On Task behavior by the boy, the teacher contacted the boy while he was On Task an average of only 3.6 times per session.

Observer Collected Data about Changes in Teacher Behavior

Observers recorded every occasion on which teachers contacted target children and classified these contacts as following On Task behavior, Off Task but Appropriate behavior, or Off Task and Inappropriate behavior. Table 4 presents these data broken down in several different ways for the four experimental teachers.

Insert Table 4 about here

The first row of Table 4 gives a measure of the rate at which teachers contacted target children. This rate was computed by dividing the number of contacts of all types occurring during an observation

session by the number of minutes of observation and multiplying by 100. The second and third rows give the percentage of contacts which followed On Task and Appropriate behavior respectively, computed as follows:

$$\frac{\text{No. of contacts following On Task (or Appropriate) behavior}}{\text{Total no. of contacts during session}}$$

The fourth and fifth rows give a measure of the rate of contacts following On Task and Appropriate behavior respectively. The rate was computed by dividing the number of contacts following On Task (or Appropriate) behavior by the number of minutes of observation and multiplying by 100. The last two rows present a measure of the rate of contacts following On Task or Appropriate behavior respectively per unit of On Task or Appropriate behavior by the child. This rate was computed by dividing the number of contacts following On Task (or Appropriate) behavior by the number of minutes of On Task (or Appropriate) behavior during the session and multiplying by 100. The last two rows thus indicate whether changes in the amount of attention to On Task (or Appropriate) behavior during a session resulted from changes in the amount of On Task (or Appropriate) behavior which occurred, or the frequency with which the teacher attended to such behavior when it did occur.

Table 4 shows that on all the measures used, the two successful teachers, A and B, increased their attention to On Task and Appropriate behavior by the target child. They also increased the amount they contacted the child. In contrast, the two unsuccessful teachers, C and D, <u>decreased</u> their attention to On Task and Appropriate behavior on all of the measures, except that Teacher D increased the percentage of contacts which followed Appropriate behavior.

Group Comparisons between Experimental and Control Subjects

Group comparisons between experimental and control subjects are of limited value because of the small groups and because the four teachers and target children in the experimental group did not respond similarly to the program. However, to give some perspective to changes which did occur, Table 5 presents mean group differences on several

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Insert Table 5 about here

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measures for target children and disruptive control children in four experimental classes, and target children in five control classes.

Table 5 shows that as a group, disruptive control children in experimental classes improved slightly, but less than target children. Experimental teachers, however, remained the same or decreased slightly in amount of attention to Appropriate behavior by disruptive control children. In control classrooms, target children decreased their On Task and Appropriate behavior slightly, and teachers remained the same or decreased the amount of attention to On Task and Appropriate behavior by target children.

Discussion

Behavior Recording by Nonparticipant Observers

Most of the measures of interobserver reliability were high enough to indicate these observation procedures can be used adequately by observers with only a few hours training.

Observers had more difficulty agreeing on contacts teachers made to children than they did agreeing about children's ongoing behavior. This was probably because a child's behavior was recorded at fixed moments for which observers could be prepared, while teacher contacts

could occur at any time and observers had to be constantly alert for them.

The observations could be further simplified from those used in this study--and presumably made more reliable--in two ways. First, observers could watch one or two children rather than four, as they did in this study. This should make it considerably easier to record teacher contacts to children being observed. Second, observers could make only one discrimination when classifying behavior: they could classify behavior either as Appropriate vs. Inappropriate, or as On Task vs. Off Task, but not both. Reliability data did not consistently show either of these discriminations to be easier than the other.

Teacher Observation Procedures

It appears teachers can do quite well observing the behavior of one child and their own interactions with that child. This is evident not only from the respectable correlations which were found between teacher data and observer data, but also from the usefulness of teacher data for assessing progress during the operant shaping programs.

It is, of course, impossible to tell from teacher-observer correlations how accurately teachers collected data when observers were not present. It is quite possible that the teachers remembered to make their observations more frequently and made them more accurately when an observer was present. Still, it is important to have learned that when teachers were conscientious, as they presumably were when observers were present, they were able to make reasonably accurate observation records.

For some purposes, the usefulness of teacher records should be judged not by the correlations between teacher records and observer records, but by the success with which teacher records indicate how

an operant program is progressing. An important finding in this study was that the experimental teachers did not seem to misrepresent their own behavior while trying to shape On Task behavior in target children. The data collected by the two successful teachers showed noticeable increases in number of teacher contacts following On Task behavior. In contrast, the data collected by the unsuccessful teachers showed only small and irregular increases in contacts following On Task behavior. A consultant who does not know the child and has never observed the teacher can therefore make a fairly good prediction (if these four cases are typical) as to whether the operant program will be successful, just from examining data collected by the teacher.

The Operant Shaping Program

Two teachers were successful in increasing their frequency of attending to On Task behavior as specified in the instructions for the operant program; and these teachers produced important positive changes in child behavior which they attributed to the shaping program. Two teachers did not change their own behavior significantly. The target child of one of these teachers did not improve noticeably; the other improved but his improvement appeared to result from other factors.

It appears, therefore, that a teacher can be trained in a simple, step by step fashion to shape appropriate classroom behavior in a disruptive child under the occasional guidance of a consultant. The procedures, however, do not work for all teachers, and probably not all children. Perhaps the teachers who were unsuccessful in this study would have responded better under more consistent and more direct guidance by a consultant; or perhaps they would not have responded at all to the operant approach.

Summary

Operant intervention programs in classrooms have frequently been found effective, but their usefulness is limited because of the amount of time usually required to train teachers to use operant techniques and to collect necessary observational data. The present study was an attempt to develop simpler, more efficient training and observation procedures.

Teachers followed a three step training process to learn to observe a disruptive child's behavior at regular intervals, to observe their own interactions with the child, and to increase the child's On Task behavior by frequently initiating contact with the child when he was On Task. Observers recorded children's behavior at one-minute intervals and immediately before the children were contacted by a teacher. Reliability of observations by both teachers and observers was found to be adequate. Two teachers successfully used the procedures to change the behavior of disruptive children. Two others were not successful, and their lack of success was found to result from failure to change their own behavior.

References

Becker, W.C., Madsen, C.H. Jr., Arnold, Carole R., and Thomas, D.R. The contingent use of teacher attention and praise in reducing classroom behavior problems. Journal of Special Education, 1967, 1, 287-307.

Broden, Marcia, Bruce, Carl, Mitchell, Mary Ann, Carter, Virginia, and Hall, R. Vance Effects of teacher attention on attending behavior of two boys at adjacent desks. Journal of Applied Behavior Analysis, 1970, 3, 205-211.

Hall, R. Vance, and Broden, Marcia Behavior change in brain-injured children through social reinforcement. Journal of Experimental Child Psychology, 1967, 5, 463-479.

Hall, R.V., Lund, Diane, and Jackson, Deloris Effects of teacher attention on study behavior. Journal of Applied Behavior Analysis, 1968, 1, 1-12.

Hall, R.V., Panyan, Marion, Rabon, Deloris, and Broden, Marcia Instructing beginning teachers in reinforcement procedures which improve classroom control. Journal of Applied Behavior Analysis, 1968, 1, 315-322.

McAllister, Loring W., Stachowiak, James G., Baer, Donald M, and Conderman, L. The application of operant conditioning techniques in a secondary school classroom. Journal of Applied Behavior Analysis, 1969, 2, 277-285.

Madsen, C.H. Jr., Becker, W.C., Thomas, D.R., Koser, Linda, and Plager, Elaine An analysis of the reinforcing function of 'sit down' commands. in R.K. Parker (ed.), Readings in Educational Psychology, Boston: Allyn & Bacon, 1968

Packard, Robert G. The control of "classroom attention": a group contingency for complex behavior. Journal of Applied Behavior Analysis, 1970, 3, 13-28.

Patterson, G.R., Shaw, D.C., and Ebner, M.J. Teachers, peers, and parents as agents of change in the classroom. in F.A.M. Benson (ed.), Modifying Deviant Social Behaviors in Various Classroom Settings, Monog. #1, Dept. of Special Ed., College of Ed., Univ. of Oregon, Eugene, Ore.

Thomas, D.R., Becker, W.C., and Armstrong, Marianne Production and elimination of disruptive classroom behavior by systematically varying teachers' behavior. Journal of Applied Behavior Analysis, 1968, 1, 35-45.

Ward, M.H., and Baker, B.L. Reinforcement therapy in the classroom. Journal of Applied Behavior Analysis, 1968, 323-328.

Table 1

Interobserver Reliability:

Per Cent Agreement

	Highest Session	Lowest Session	Mean
Child Behavior			
On Task vs. Off Task-Appropriate vs. Off Task-Inappropriate	91	69	79
On Task vs. Off Task	96	80	82
Appropriate vs. Inappropriate	96	71	85
Teacher Contacts			
No. Contacts	100	54	74
Contacts following:			
On Task vs. Off Task-Appropriate vs. Off Task-Inappropriate	100	50	78
On Task vs. Off Task	100	61	82
Appropriate vs. Inappropriate	100	70	88

Table 2

Interobserver Reliability:

Pearson Product-Moment Correlations

Child Behavior	
% On Task	.92
% Appropriate	.85
Teacher Contacts	
No. Contacts	.92
No. following On Task behavior	.65
No. following Appropriate behavior	.81
No. following Inappropriate behavior	.82
% following On Task behavior	.71
% following Appropriate behavior	.43

Table 3

Correlations between Teachers and Observers

	Teacher A	Teacher B	Teacher C	Teacher D	Across Teachers
Child Behavior					
T: % On Task & O: % On Task	.531	.339	.881	.637	.410
T: % On Task & O: % Appropriate	.746	.334	.589	.777	.540
Teacher Contacts					
T: No. Contacts & O: No. Contacts	.719	.924	.681	.866	.772
T: No. following On Task behavior & O: No. following On Task behavior	.884	.938	.615	.568	.734
T: No. following On Task behavior & O: No. following Appropriate behavior	.960	.918	.653	.749	.790
T: No. following Off Task behavior & O: No. following Inappropriate behavior	.596	.768	.119	.322	.502
T: % following On Task behavior & O: % following On Task behavior	.916	.936	.709	.276	.584
T: % following On Task behavior & O: % following Appropriate behavior	.872	.926	.580	.448	.748

Table 4

Teacher Contacts to Target Children

	Teacher A			Teacher B			Teacher C			Teacher D		
	Pre	Post	Dif	Pre	Post	Dif	Pre	Post	Dif	Pre	Post	Dif
(No. contacts per min.) x 100	8.9	13.3	+4.4	6.9	17.6	+10.7	19.4	13.2	-6.2	8.0	7.6	-0.6
% following On Task behavior	10.0	65.0	+55.0	44.3	86.0	+41.7	41.0	27.3	-13.7	61.0	34.2	-26.8
% following Appropriate behavior	10.0	76.0	+66.0	61.0	89.0	+28.0	67.0	66.7	-0.3	72.0	83.8	+11.8
(No. contacts following On Task behavior per min.) x 100	1.1	8.9	+7.8	3.1	14.5	+11.4	10.6	4.4	-6.2	7.4	2.2	-5.2
(No. contacts following Appropriate behavior per min.) x 100	1.1	11.1	+10.0	4.6	15.2	+10.6	14.4	8.8	-5.6	6.3	6.0	-0.3
(No. contacts following On Task behavior per min. of On Task behavior) x 100	3.1	13.6	+10.5	4.7	17.8	+13.1	17.5	8.0	-9.5	11.7	4.4	-7.3
(No. contacts following Appropriate behavior per min. of Appropriate behavior) x 100	1.6	13.9	+12.3	6.4	16.8	+10.4	16.8	12.2	-4.6	12.2	8.6	-3.6

Table 5

Mean Group Changes in

Child Behavior and Teacher Contacts

	Target Child in Four Experimental Classes	Disruptive Control in Four Experimental Classes	Target Child in Five Control Classes
Child Behavior			
% On Task	+12.2	+8.6	-1.1
% Appropriate	+14.2	+4.8	-6.3
Teacher Contacts			
(No. contacts per min.) x 100	+1.0	-2.2	-2.9
% following On Task behavior	+11.8	-5.3	-4.8
% following Appropriate behavior	+27.3	-0.2	-4.8
(No. contacts following Appropriate behavior per min. of Appropriate behavior) x 100	+3.4	-0.7	-1.4

Part I

Child Behavior Record

I. Introduction

The purpose of the Child Behavior Record is to give you a simple but systematic way to find out how much time your problem pupil (referred to here as the "Target Child") spends working and how much time he spends not working. Using this record you will be able to measure the child's improvement over the next few weeks.

II. Instructions for Observing

A. Necessary Materials

1. Record Card
2. Pencil or pen
3. Clock

B. Selecting an Observation Time

During the entire behavior modification program you will be observing the target child for one hour (the same hour) each day. Before you begin, consider your classroom schedule and try to choose an hour during which

1. the child tends to be disruptive or to misbehave;

2. it will be possible for you to carry around the Record Card and a pencil;

3. you will be able to give the child some extra attention if necessary later in the program (e.g. do not choose a time when you are overly involved with a small group of students which does not include the target child).

Preferably, this time should also be an hour during which your class activities are fairly similar from day to day.

C. Making the Observations

Recording the target child's behavior simply requires noticing every five minutes whether or not he is working and circling a plus (+) on the record card if he is working ("On Task") and a minus (-) if he is not working ("Off Task").

To time your observations glance periodically at

the wall clock or at your watch; and make your observations whenever you notice that a new five minute interval has begun. For instance, suppose you have chosen to use the hour from 10:30 to 11:30 as your experimental period. When you first notice that it is past 10:30, look at your target child for a few seconds, decide if he is working, and circle the plus (+) or the minus (-) following ":30" on your Record Card. When you first notice that it is past 10:35, make another observation and circle the plus or the minus following ":35" on the Record Card. In the same way, make an observation when you notice it is past 10:40, and when it is past 10:45, and so on. If you should forget to look at the clock and happen to miss making an observation, just leave that space blank on the card. For instance, if you make your 10:45 observation, and then the next time you look at the clock it is 10:57, record your observation for 10:55, but just leave the 10:50 spot blank on the Record Card.

As was stated above, you will circle the plus (+) if the child is working, and the minus (-) if he is not. To be considered working, the child must actually be accomplishing something--he may be reading, or writing, or listening to you talk, or participating in a discussion, or doing some other type of school work. However, if he is disrupting, or if he is doing nothing, or if he is taking a break (such as a milk break) at the time you observe, you will record a minus. In other words, the purpose of these observations is to give you an idea how much of the period the child is actually studying or accomplishing something and how much he is doing other things such as fooling around, doing nothing, getting ready to work, talking inappropriately, etc.

The timing procedure and Record Card are designed to be a help, not a hindrance to you, so don't become so concerned about them that they interfere with your teaching. While you should try to make all twelve observations each hour, it won't really make much difference if you miss a couple. Also, it is not necessary that each observation be made exactly at the beginning of the five minute interval. Whether you record your 10:35 observation at 10:35 or at 10:36 or at 10:38 won't matter as long as you record it when you first <u>notice</u> it is past 10:35.

III. <u>Scoring and Graphing Child's Behavior</u>

A. Necessary Materials

1. Record Card
2. Pencil or pen
3. Child Behavior graph

B. Scoring

1. Count the number of times you have recorded the

child's behavior as +, and record this number in the space on the upper half of the card labeled "No. +".

2. Count the number of times you have recorded the child's behavior as minus (-) and record this number in the space labeled "No. -".

3. Add the "No. +" and the "No. -" to get the total number of observations and record this number in the space labeled "Total Obs." (This number will be 12 if you didn't miss any observations.)

4. Divide the "No. +" by the total number of observations ("Total Obs.") to get the "Per Cent +" and record this.

C. Graphing

Find the appropriate date on the "Child Behavior" graph and plot the Per Cent + for that date.

(You may ignore this and all other graphs if you wish. However, you will probably find it interesting to compare your target child's behavior from day to day, or from the beginning of the program to the end; and it is for this reason that I suggest you fill in the graph each day.)

Part II

Teacher Contact Record

I. Introduction

The purpose of the Teacher Contact Record is to give you an idea of when and how much you interact with the Target Child.

II. Instructions for Observing

A. Necessary Materials

1. Record Card
2. Pencil or pen
3. Clock

B. Selecting a Time

You will use the same one hour period for recording teacher contacts which you have chosen for recording child behavior. Initially, while you are getting used to using the two recording techniques, you will record child behavior on some days and teacher contacts on other days. Later, however, you will begin recording both at the same time.

C. Making the Observations

Notice the circle with the numbers one through twelve on the lower half of the Record Card. This represents a clock, and you will use it to indicate when you interact with the target child.

Any time you speak to or touch the target child it is called a "Teacher Contact" with the child, or just "Contact" for short. Each time you contact the target child, place a mark on the Record Card "clock" near the appropriate time. For instance, if you speak to the child at 22 minutes past the hour, place a mark on the "clock" between the 4 and the 5. You do not have to record the time exactly--within five minutes of the exact time will be sufficient. You may place your marks either inside or outside the circle or both--just so you can see them and count them later.

Each mark you place on the "clock" will be either a plus (+) or a minus (-): put a plus (+) if the child was working ("On Task") when you first contacted him, and a minus (-) if he was not working ("Off Task") when you first contacted

him. In other words, you are observing and scoring the child's behavior just as you were in Part I of this program, but instead of observing him every five minutes, you are now observing him every time you contact him. Just remember that your rating of + or - should indicate how the child was behaving immediately <u>before</u> you spoke to him or touched him--not how he responded to your speaking to him.

EXAMPLE:

Your students are supposed to be working alone at their desks. You notice that your target child is just sitting there staring out the window, and you go over to him and remind him what his assignment is. You look at the clock and see that it is 10:03. You then place a minus (-) on the Record Card "clock" between the 12 and the one, indicating that he was not working.

Later you are conducting a discussion. The target child raises his hand and you call on him. You see that it is now 10:17, so you put a + on the "clock" between the 3 and the 4.

The discussion ends and your pupils are again asked to work alone at their seats. You are circulating around the room and you come to the target child at 10:34. He is working well, so you give him a pat on the head and perhaps speak to him. You put a + on the "clock" between the 6 and the 7.

Still later the child gets into an argument with the child behind him. You scold them both, note that the time is 10:47, and place a - on the "clock" between the 9 and the 10.

<u>Note</u>.--At times you will perhaps speak with the target child for several minutes or work alone with him for a while. Even though it may be quite long, this is still scored as a single contact, unless it has been interrupted by your leaving the target child or speaking to another child.

III. <u>Scoring and Graphing Teacher Contacts</u>

A. Necessary Materials

1. Record Card
2. Graph of "Contacts: No. +"
3. Graph of "Contacts: No. -"
4. Graph of "Contacts: Per Cent +"

B. Scoring

1. Count the number of +'s you have scored on the

Record Card "clock" and record this number in the space on the lower half of the Record Card labeled "No. +".

2. Count the number of -'s you have scored on the Record Card "clock" and record this number in the space labeled "No. -".

3. Add the "No. +" and the "No. -" and record this number in the space labeled "Total Contacts."

4. Divide the "No. +" (#1) byt the "Total Contacts" (#3) and record this in the space labeled "Per Cent +".

C. Graphing

1. Find the appropriate date on the "Contacts: No. +" graph and plot the number of +'s.

2. Find the appropriate date on the "Contacts: No. -" graph and plot the number of -'s.

3. Find the appropriate date on the "Contacts: Per Cent +" graph and plot the "Per Cent +."

Part III

Understanding and Changing the Child's Behavior

We generally think of children as enjoying praise and disliking punishment. Consequently we usually try to praise children when they are good and scold or punish them when they are bad. While this seems to work for most children, suppose we have a child who wants adult attention so much that he would rather be punished than have no attention at all. Such a child knows that adults won't praise him all the time, so he learns to accept punishment as being better than no attention at all. Consequently, while he may behave well at times, he will also misbehave a great deal just to be sure you notice him and pay attention to him.

The program you are about to start is designed to convince the child that he <u>can</u> get your attention immediately and frequently if he works or studies. To show him this you must be very careful to notice <u>every</u> instance when he is working as he should, and always to go over to speak to him, give him a pat on the back, or help him with his work for a short time when you see that he is behaving. The important point here is not to spend long periods of time working individually with the child, but instead to contact him for a few seconds over and over again when he is working.

Specifically, to be most effective and to change the child's behavior most rapidly, you should speak to him or otherwise contact him at least <u>once a minute whenever he is studying or doing other school work</u>. Thus, if he studies for ten minutes during an hour period, you should make about ten separate contacts with him during those ten minutes. The first day this won't take much time, because the child probably won't study more than a few minutes. In fact, he may not study at all, in which case it won't take any extra time at all. The second day he will probably study a little longer, and you will have to spend more time speaking to him and praising him. Gradually over a few weeks he will increase the time he studies (although you should expect occasional bad days to interrupt the improvement); and the better he gets, the more of a bother it will be to contact him frequently when he does study. But don't give up. When you start to feel like you're spending all your time with the one child, it will be an indication that he is studying most of the time--(What a change!)--and at that time we will have you start <u>gradually</u> reducing the frequency with which you contact or praise him for good behavior, until you only spend a normal amount of time with him. Please note the word "gradually." If you changed suddenly from lots of attention to little attention, he would go right

back to misbehaving again to get attention.

How should bad behavior be handled?

You know now that you should attend to the child repeatedly when he is good. When he is bad, you may continue to do whatever you have always done: if you have scolded him, do that; if you have sent him from the room, do that; if you have ignored him, do that; if you have done all these and more, continue doing that. In other words, the child will still be getting attention in the form of punishment of some kind when he misbehaves; but the idea is that he will be getting so much more attention (as well as more pleasant attention) when he is good, that he will choose to be good rather than bad when he wants you to notice him.

How soon will changes show up in the child's behavior?

This depends on the child, as well as on how frequently and regularly you contact him for On Task behavior. If your target child is merely disruptive and has well developed academic skills (especially reading, writing, and arithmetic), you may get very exciting changes in only a few days or a couple weeks. However, if your target child is poor in basic academic skills (as are most severely disruptive children) then changes will appear more slowly. This is because school work will be so difficult and consequently unpleasant for the child that it will be more difficult for him to learn to work steadily for long periods of time. However, even with this type of child you may notice important changes beginning as early as one or two weeks after you start the program.

What about the data collecting?

You should continue recording your classroom observations just as you did before, both observing the child's behavior at five minute intervals and noting whether he was On Task (working) or Off Task (not working) each time you contact him.

What changes will show up?

In the next several days and over the next few weeks your graphs should (hopefully) show the following changes:

1. First the number of "Contacts: No. +" should show a large increase, indicating that you are contacting the child much more frequently when he behaves appropriately.

2. Initially the number of "Contacts: No. -" will probably remain the same, since you will still be treating the child the same as before when he is bad. Soon, however, as he begins spending more time being good and less time being bad, there will be a decrease in "Contacts: No. -".

3. "Contacts: Per Cent +" will increase, as a result of both your contacting the child more frequently for good behavior and his being bad less often.

4. "Child Behavior: Per Cent +" will show a gradual and probably irregular increase. When this begins increasing you will know the program is being successful. When it reaches a high level for several days it will be time to start gradually reducing the frequency of praise and other contacts for good behavior.

Part IV

Review of Behavior Change Program

This paper is to serve as a reminder of what you should do to change your target child's behavior.

1. Most important: Contact him repeatedly when he behaves well. The idea here is not that you should work alone with him for long periods of time--if you did that, you wouldn't have time for any of your other students, and it probably wouldn't teach him to work by himself anyway. Just be sure you speak to him or give him a pat on the back every time he does what he should.

2. When he misbehaves, just treat him in whatever way you usually would. Don't try anything special just for this program.

3. Don't worry if he always misbehaves the first few days of the program. There's not much you can do but wait until, on some golden day, he behaves appropriately for a few seconds. But be sure you are ready to contact him immediately when he does.

Instructions for Classroom Observers

In each classroom you will be observing four boys. The teacher will have chosen these boys before you first arrive. On your first visit to the classroom find out from the teacher who they are and take a good look at them. You will probably find it helpful to record which desk they sit in (e.g. "row 2, seat 4"); but don't depend on this as your only reminder of which boys to observe because they may change desks, move around the room, or sit in a mixed-up group in the front of the room.

Making the Observations

You will be making two kinds of observations for each boy. First you will be making "child behavior" observations. For these you will record each boy's behavior at a specific moment once a minute. To time the observations use the second hand on the wall clock (or on a watch if no clock is available). For the first boy, make your observation the moment the second hand reaches the "3". For the second boy, make your observation the moment the second hand reaches the "6". Similarly, make your observations for the third and fourth boys the moments the second hand reaches the "9" and the "12" respectively.

For each boy record whether he was "On Task" (+) the moment you observed him or "Off Task" (-). "On Task" means specifically that he was doing (academic) school work: reading, writing, listening to the teacher, participating in a discussion, drawing (if appropriate), etc. "Off Task" means he was doing anything else, whether or not it was appropriate. Thus if the boy is staring out the window, disrupting others, sharpening his pencil, getting a book out of his desk, waiting to talk to the teacher, or anything else which is not specifically study behavior he is scored as Off Task (-).

Many of these Off Task (-) behaviors will, of course, be appropriate behaviors, even though they are not study behaviors and therefore cannot be scored as On Task. For instance, if a child has finished his assignment and is sitting quietly waiting for the teacher to check it over, he is behaving very appropriately even though he is not On Task. Similarly, if the class is taking a milk break, a child may be doing nothing constructive but still be behaving appropriately. Other examples of behavior which is Off Task but still appropriate may include getting necessary materials out of a desk in order to do an assignment, and passing out papers or otherwise helping the teacher with

classroom chores. In order to indicate that such behavior is appropriate even though it is not On Task, use a minus with a circle around it (⊖). The minus means that the behavior was Off Task, but the circle indicates it was not "bad" or "inappropriate" behavior.

The second set of observations you will be making for each child are "Teacher Contact" observations. A "Teacher Contact" is essentially an interaction between a teacher and a child. Any time the teacher speaks directly to a child or any time she physically touches a child it is considered to be a Contact. A single Contact lasts as long as the teacher continues to interact with the child: this may be for a few seconds, or it may be for several minutes (such as when a teacher works individually with a single child for several minutes). If the teacher leaves the child she has been talking to, or if she speaks to another child or adult, the Contact is considered to have come to an end, and when she again speaks to the first child, it is considered a new contact.

You will rate Teacher Contacts for the same four boys whose behavior you are observing. Unlike the Child Behavior observations, however, which are recorded at specific intervala, Teacher Contacts with the four target boys are to be scored any time they occur. In other words, you will score a Contact each time the teacher speaks to or touches one of the four boys.

Teacher Contacts are classified according to the child's behavior immediately before the teacher speaks to him or touches him. If the child is On Task immediately before the teacher contacts him, the Contact is scored as +. If the child is Off Task immediately before the teacher contacts him, the Contact is scored as -. If the child is Off Task but still behaving appropriately immediately before the teacher contacts him, the minus is circled (⊖) to indicate that although the child was not working before being contacted, he was behaving appropriately.

It is not necessary for the teacher to use the child's name when she speaks to him, but she must be speaking directly to the child in order for it to be considered a Contact-- if she is speaking generally to two, or three, or several children it is not considered to be a Contact, even if she is talking about something that concerns the target child.

If it is clear that the teacher is speaking to one of the four target children, you should score a Contact even if the child does not hear her. This probably will not occur very often.

Hopefully the entire hour while you are observing will be devoted to school work. It is possible, however, that the class will take a break of some kind during that time--

for instance, they may stop for milk and cookies, or they may all spend a few minutes stretching or putting on gym shoes. If this happens, just continue observing, but note on your scoring sheet that this is not formal class time. (On Task behavior is not very likely to occur during a break, of course, so your ratings will probably all be - or (2).)

If one of the target children leaves the room, record this fact and leave a blank for those observations.

General Remarks about Observing in Classrooms

A skilled observer can sit in a classroom and practically go unnoticed by the children if he follows a few simple rules.

1. Don't speak to anyone. If a child speaks to you or asks you a question, just ignore him. If a teacher speaks to you, ignore her if possible, unless she is asking you to move your chair or something like that. The teachers have been told that you have instructions not to speak to anyone, so don't worry that they will think you are unfriendly.

2. Look bored. Good observers appear to just sit there without looking at anything. Especially, don't let the target children see you watching them. If they look at you, just keep staring into space or around the room or at your papers and observe them out of the corner of your eye.

3. Don't participate in any aspect of the class. If someone says something funny, don't laugh. If the teacher leaves the room and the children get disruptive, just ignore them and keep observing. It's not your job to control them in any way.

4. Never talk to a teacher about what went on in the classroom or about any of the children. If a teacher starts to talk about her class when you meet her in the hall or in the lounge, just tell her you have specific instructions not to talk about such things since you might accidentally learn too much about the research program.

SUMMARY OF SCORING INSTRUCTIONS FOR CLASSROOM OBSERVERS

	WHEN to Record	WHAT to Record	CATEGORIES
CHILD BEHAVIOR	Once a minute for each child.	Child's behavior at moment of observation.	+ = On Task (actually studying, participating in discussion, or otherwise doing academic school work). - = Off Task, not studying or participating when should be; Inappropriate behavior. (-) = Off Task, but behaving appropriately at the time.
TEACHER CONTACTS	Every time teacher touches or speaks to child. (Score a second Contact only after teacher has left child or spoken to another individual.)	Child's behavior immediately preceding the Contact.	+ (All defined as above, but scored according to the child's - behavior immediately <u>before</u> being contacted by the (-) teacher.)

Teacher_____ School_____ Observer_____ Date_____ Time Started_____

TC	CB	Notes	CB	TC	TC	CB	Notes	CB	TC	TC	CB	Notes	CB	TC	TC	CB	Notes	CB	TC
40																			